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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,671	12/20/2000	Norbert Schmidt	7875/01012	9919

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EXAMINER

KAO, CHIH CHENG G

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 03/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/742,671

Applicant(s)

SCHMIDT ET AL.

Examiner

Chih-Cheng Glen Kao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities. Claim 1 recites the limitation "the input wheel" in line 22. This appears to be an antecedent problem created by a drafting oversight. This objection may be obviated by replacing "the" with - -an- -. Appropriate correction is required.
2. Claim 1 is objected to because of the following informalities. Claim 1 recites the limitation "the output wheel" in line 25. This appears to be an antecedent problem created by a drafting oversight. This objection may be obviated by replacing "the" with - -an- -. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson (US Patent 2282189) in view of Brink (US Patent 2707451), Glennon (US Patent 1809934), and Hwang (US Patent 5610577).

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5. With regards to claim 1, Jackson discloses a gear reduction device (Title and Fig. 2) for measuring and transmitting rotary (Fig. 2, #12, and col. 1, lines 50-55) and swivel movements (Fig. 2, #37, and col. 3, lines 25-30) comprising a plurality of wheel/pinion pairs, each having a gear axle (Fig. 3, axles connected to #39 and 40), a gear wheel (Fig. 4, #39 and 40), and a pinion gear (Fig. 4, #42 and 50), the gear wheel and pinion gear rigidly connected to the gear axle (Fig. 3, #39, 40, 42, and 50), said device coupled to a rotary object moving in a plane of rotation (Fig. 2, #12) whose movement is measured within a measuring range and said device producing an output motion reduced in relation to the movement of the rotary object (Fig. 2, #12 and 36), wherein at least part of the gear wheel planes are parallel to each other (Fig. 3, #39 and 40), wherein the pairs follow each other in sequence of the pinion gear engaged in the gear wheel of the next pair (Fig. 4, #39, 42, 40, and 42), wherein the first pair is an input wheel engaged and drive by the rotary object (Fig. 4, #11 and #39), and the last pair is an output wheel with the pinion engaged to drive a optical angle-measuring device for rotary swivel motion in a swivel motion plane (Fig. 4, #40, and 37).

However, Jackson does not disclose the gear wheels of different pairs laying in differing planes and at least part of the planes are inclined in relation to the plane of the rotary object rotation, the gear wheels of equal diameter.

Brink teaches different gear wheels laying in differing planes (Fig. 1). Glennon teaches at least part of the planes inclined in relation to the plane of the rotary object rotation in another embodiment (Fig. 3, #10 and 11). Hwang teaches gear wheels of equal diameter (Fig. 4, #6).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have different gear wheels laying in different planes of Brink with the

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device of Jackson, since rearranging parts of an invention only involves routine skill in the art as exemplified by Brink (Fig. 1, #13 and 20, and Fig. 7). One would be motivated to rearrange these parts to place the indicator in the instrument or dashboard of an automobile with other indicators as implied from Brink (Fig. 1 and 7).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have at least part of the planes inclined in relation to the rotary object rotation of Glennon with the device of Jackson, since rearranging parts of an invention only involves routine skill in the art as exemplified by Brink (Fig. 1, #13 and 20, and Fig. 7). One would be motivated to rearrange these parts to place the indicator in the instrument or dashboard of an automobile with other indicators as implied from Glennon (col. 3, lines 1-5).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have equal gear diameters of Hwang with the device of Jackson, since the mere change in size of parts would have involved only routine skill in the art as exemplified between the different gears of Hwang (Fig. 4, #5 and 6). One would be motivated to have gears of equal diameters for ease of manufacturing parts in that one would only need to manufacture one type of gear size with one machine instead of two gear sizes, which would require more machinery. One would be motivated to have equal gear diameters to keep the rotation of gears one to one for ease of calculating the output. For example, if the ratio of all gears were one to one, the ratio applied between the input gear and the rotary body could be applied to the output gear. If all the gear sizes were different, one would have to calculate the gear ratios of each gear to gear to calculate a fine ratio from the rotary body to the output gear. One would also be

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motivated to have gears of equal diameter for ease of having replaceable parts. Instead of keeping stock of two gear sizes, one would only have to keep stock of one gear size.

6. With regards to claim 2, Jackson et al. further discloses the input wheel parallel to the plane of rotation of the rotary object (Fig. 2).

7. With regards to claim 3, Jackson et al. further discloses the output wheel parallel to the swivel motion plane (Fig. 4).

8. With regards to claim 4, Jackson in view of Brink, Glennon, and Hwang suggests a device as recited above. Jackson et al. further discloses all gear planes parallel to each other (Fig. 4).

However, Jackson et al. does not disclose all gears inclined at an oblique angle in relation to the plane of the rotary object.

Brink further teaches gear wheels laying obliquely to the plane of the rotary object (Fig. 1). Glennon also teaches gear wheels laying obliquely to the plane of the rotary object (Fig. 3, #10 and 11).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have all gears inclined at an oblique angle in relation to the plane of the rotary object with the suggested device of Jackson in view of Brink, Glennon, and Hwang, since rearranging parts of an invention only involves routine skill in the art as exemplified by Brink (Fig. 1, #13 and 20, and Fig. 7). One would be motivated to rearrange these parts to place the

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indicator in the instrument or dashboard of an automobile with other indicators as implied from Brink (Fig. 1 and 7).

9. With regards to claim 5, Jackson et al. further discloses the input wheel has an input shaft (Fig. 3, #42) and is kinematically coupled to a driving unit (Fig. 2, #12) and an output wheel with a central output shaft (Fig. 4, #50) adapted to transmit movement to a driven device (Fig. 4, #37).

10. With regards to claim 6, Jackson in view of Brink, Glennon, and Hwang suggests a device as recited above.

Jackson further discloses a base plate (Fig. 3, #21) and cover plate (Fig. 3, #13) and the device flange-mounted on the driving unit to form a unitary module (Fig. 3 and 5).

However, Jackson does not disclose an input and output shaft running on rotary bearings mounted within.

Hwang further teaches an output shaft running on rotary bearings mounted within (Fig. 3, #8).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have bearings on a shaft of Hwang with the suggested device of Jackson in view of Brink, Glennon, and Hwang, since one would be motivated to have bearings to provide support to a rotation shaft in a housing as implied from Hwang (Fig. 3).

It would also have been obvious, to one having ordinary skill in the art at the time the invention was made, to have bearings on an input shaft of Hwang with the suggested device of Jackson in view of Brink, Glennon, and Hwang, since mere duplication of essential working

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parts of a device only involves routine skill in the art. It would have been obvious to put bearings on any shaft. One would be motivated to put bearings on an input shaft to provide support in a housing as implied from Hwang (Fig. 3).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (703) 605-5298. The examiner can normally be reached on M - Th (8 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



gk
March 20, 2003

